

## Case study

### Mushroom bezoar: rare cause of small bowel obstruction, a case report and literature review.

#### Abstract

Small bowel obstruction is a common acute presentation in any general surgical unit, however an obstruction secondary to a bezoar impaction is considerably infrequent. The diagnosis of small bowel obstruction due to phytobezoar pre-operatively remains challenging. We present a case of small bowel obstruction caused by shiitake mushroom phytobezoar which was successfully treated with a laparotomy and enterotomy with foreign body removal. Intraoperatively undigested shiitake mushrooms were found.

Keywords: Small bowel obstruction, phytobezoar, shiitake mushrooms, mastication

#### Introduction

Lentinula edodes, or commonly known as shiitake mushroom is a very common ingredient in many Asian cuisines, and also considered as medicinal mushroom in some forms of traditional medicine. They are found fresh, dried, or even as forms of supplements. However, without proper mastication, undigested shiitake mushroom can form phytobezoars, which can be a rare cause of small bowel obstruction. Here we report a case of small bowel obstruction caused by shiitake mushroom phytobezoar requiring surgical intervention. Patient underwent exploratory laparotomy and enterotomy with removal of the shiitake mushroom. The surgery was successful and patient recovered well post-surgery without complications.

#### Case Report

A 55-year-old man with a history of open appendicectomy presented with abdominal pain and vomiting for two days duration. Upon presentation, he was still able to pass flatus and motion. Clinically his abdomen was mildly distended without any signs of peritonism. His blood investigations showed leukocytosis with a normal renal profile. Plain abdominal radiography showed dilated small bowel and ultrasound scan further confirmed the diagnosis of small bowel obstruction. Conservative management with nasogastric suction, decompression, and intravenous fluids were not effective, and on day two of admission, patient developed complete intestinal obstruction with peritonism. He underwent exploratory laparotomy, enterotomy, and foreign body removal. Intraoperatively, undigested shiitake mushrooms were found at 20cm from ileocaecal junction, causing small bowel dilatation and proximal congestion. The dilated bowels collapsed after removal of the foreign body, without signs of ischaemia. The enterostomy was primarily repaired post removal. Further history from the patient revealed that he consumed shiitake mushrooms

merely hours prior to the start of his symptoms. Patient was discharged well on day four post-surgery.



Fig. 1. Abdominal X-Ray showing small bowel dilatation



Fig. 2. Undigested shiitake mushrooms removed from small bowel intraoperatively

## Discussion

Small bowel obstruction presenting with classic intestinal obstruction symptoms is a common acute presentation in the emergency setting. However small bowel obstruction secondary to bezoar impaction is significantly less common, with a reported frequency of around 4%<sup>1</sup>. In our case the patient presented with subacute intestinal obstruction symptoms of abdominal pain and vomiting for two days duration. Only upon further questioning that patient offered the history of eating the shiitake mushrooms a few days prior to presentation.

Bezoars result from ingestion of foreign material that accumulates in the gastrointestinal tract because of large particle size, indigestibility, gastric outlet obstruction, or intestinal stasis<sup>2</sup>. We deduced from our case that the patient has not been chewing his food (shiitake mushroom) appropriately prior to swallowing as evidenced by the specimen collected intra-operatively.

The most common CT finding of phytobezoars includes a round or ovoid mass containing mottled gas at the obstructed site<sup>3</sup>. Yildirim, et al reported a CT finding of intraluminal mass with mottled gas pattern at the site of obstruction and abrupt luminal collapse beyond the lesion is diagnostic for small bowel bezoar<sup>4</sup>.

However, the shiitake mushroom is radiotransparent<sup>5</sup>, therefore poses a difficulty in getting a positive finding radiologically. Therefore, definitive diagnosis of phytobezoars is often made at laparotomy. The commonest site of impaction is the distal ileum at 50–75 cm proximal to the ileocaecal valve<sup>3,6</sup>; likely due to reduced peristalsis in this segment combined with increased water absorption<sup>7</sup>. Our patient did not go for a CT imaging as clinically he had peritonitis on day two of admission and the decision was made for operative management thereafter.

There are reported cases of distal ileal phytobezoars being manually fragmented and milked into the caecum, but more often an enterotomy with primary closure is required for both definitive diagnosis and treatment<sup>5</sup>. Rarely, bowel resection and anastomosis are indicated for impacted bezoar with evidence of bowel ischaemia<sup>6</sup>. Fortunately, our patient only underwent exploratory laparotomy, enterostomy, and phytobezoar removal without bowel resection. He was discharged well post operatively on day four.

## Conclusion

Small bowel obstruction is commonly encountered in surgical practice worldwide. However, phytobezoars are rarely reported as the cause of obstruction, and early diagnosis is difficult as they are mostly diagnosed intraoperatively. Thorough history taking will help in pinpointing the diagnosis of mushroom bezoars, and can infrequently be picked up in radiological imaging, but are limited as mushrooms are radiolucent. However, prompt action and surgical treatment is vital to prevent further complications. As in this case, the importance of proper mastication must be highlighted to patients in order to avoid future recurrence.

### Consent

As per international or university standard, patients' written consent has been collected and preserved by the authors.

### Ethical approval

It is not applicable.

### NOTE:

The study highlights the efficacy of " **traditional medicine** " which is an ancient tradition, used in some parts of India. This ancient concept should be carefully evaluated in the light of modern medical science and can be utilized partially if found suitable.

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